

Appl. No. 10/044,535
Amdt. dated April 26, 2005
Reply to Office Action of March 11, 2005

Remarks

The present amendment responds to the final Official Action dated March 11, 2005. The Official Action objected to the specification for informalities. Claims 1-16 were rejected under 35 U.S.C. §103(a) as unpatentable over Brieche U.S. Patent No. 5704049 ("Brieche"). This objection and grounds of rejection are addressed below following a brief discussion of the present invention to provide context.

The Abstract in the specification has been amended in accordance with the Examiner's suggestions. Claims 1-16 are presently pending.

The Present Invention

A system according to an aspect of the present invention comprises a host computer communicating with a plurality of electronic shelf labels (ESLs). Each ESL includes registers or other similar memory space for storing information. Information for storage in the ESL registers is communicated to each ESL by the host computer. The host computer maintains awareness of the information to be stored in each ESL register. Whenever the host computer transmits an initial message to the ESL, the host computer awaits a response from the ESL. When a response is received from the ESL that is interpreted as a positive acknowledgement, a verification message is sent to the ESL to test the content of the ESL's registers. The host computer awaits a response to the verification message from the ESL. If a response is received, it is evaluated to determine if it indicates that the contents of the ESL's registers match the expected values as maintained by the host computer. If the response to the verification message indicates a match,

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the initial response is logged as successful. In so doing, the host computer verifies that the contents of the ESL's registers match the expected values the host computer maintains.

Interview Summary

The Examiner is thanked for the courtesy of a telephone interview concerning the above case on April 19, 2005. In this telephone call, the deficiencies of Briechele as outlined in the Remarks section below were discussed. Although agreement was not reached on the disposition of the case, the Examiner agreed to talk with his supervisor and schedule an interview with him or her for them to provide a clarification as to why the present claims do not define over the relied upon art.

The Objections to the Specification

The Official Action objected to the Abstract due to informalities noted by the Examiner. In particular, the Official Action objected to the phrase "is described" and the term "may" used in the Abstract. The Official Action suggested removing the phrase "is described" and the term "may." The specification has been amended to remove the objected to wording in accordance with the Examiner's suggestions. Thus, this objection has been overcome and should be withdrawn.

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The Art Rejections

As addressed in greater detail below, Briechele does not support the Official Action's reading of it and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicants do not acquiesce in the analysis of Briechele made by the Official Action and respectfully traverses the Official Action's analysis underlying its rejections.

Claims 1-16 were rejected under 35 U.S.C. §103(a) as unpatentable over Briechele. Briechele addresses a sub-global addressing technique to command one or more electronic shelf labels (ESLs) to perform a desired action. In a sub-global example, if a group of ESLs were located on the same ESL rail and, thus, had a common rail ID, say X, a gondola controller would issue a command with a rail ID X. In this way, each ESL having rail ID X would perform the requested command. Briechele, col. 2, lines 47-63. Briechele's addressing scheme merely enables an ESL to respond to only commands which contain a characteristic shared by the ESL. Briechele does not address the problem of verifying the contents of an ESL with expected values in a host.

In stark contrast to Briechele, the claimed aspect of the present invention addresses automatically detecting and correcting communication errors which result in incorrect storage of data in an ESL's register. If communication between an ESL and a host is established, the present invention transmits a verification message to verify the content's of the ESL's registers. Upon receipt of a verification message, the ESL generates a response containing, for example, a cyclic redundancy check (CRC) of the ESL's registers. Upon receipt of the response message, the host would generate a CRC based on the expected values of the ESL registers maintained at the host and compare the generated CRC with the received CRC. If the CRCs match, the host

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has advantageously determined that the contents in the ESL register match the expected contents maintained at the host. Claim 1 reads as follows:

1. (previously presented) A method of automatically detecting and correcting communication errors which result in incorrect storage of data in an electronic shelf label's (ESL's) register, the method comprising the steps of:
 - (a) transmitting a an initial message from a host computer to the ESL;
 - (b) waiting for a response to the initial message;
 - (c) if the response is a negative acknowledgement or no response is received by the host computer, retransmitting the initial message;
 - (d) if the response is interpreted by the host computer as a positive acknowledgement, transmitting a verification message to verify the contents of the ESL's registers;
 - (e) waiting for a response to the verification message; and
 - (f) if the response to the verification message indicates that the contents of the ESL's registers match the expected contents as maintained by the host computer, logging the initial message as successfully received. (emphasis added)

As admitted by the Official Action, Bricchle does not explicitly disclose steps (d), (e), and (f) in its textual discussion. The Official Action relies on Figs. 5a and 5b and col. 14, lines 43-49 as purportedly teaching these steps. Applicants respectfully disagree. Figs. 5a and 5b of Bricchle illustrate a method of how an ESL handles a received message. First, the ESL in Bricchle at step 141 checks the CRC to determine if the message was received properly. Unlike the present invention, this use of the CRC does not verify the contents of the ESL. The CRC in Bricchle is merely used to determine whether the received message is valid. Eventually as illustrated at Fig. 5b of Bricchle, if sub-global addressing is used, the ESL performs the requested action indicated in the message or command.

In Fig. 10, Bricchle addresses an application of sub-global addressing used in combination with global addressing to overcome the difficulty of two or more ESLs responding

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at the same time. Briechele, col. 13, lines 63-67. At col. 14, lines 43-49 of Briechele, the cited text describes resetting a global flag which is used to control whether or not the ESL responds to a global query. Briechele's global flag control has nothing to do with verifying the contents of an ESL's registers with expected values maintained at a host computer as claimed. In contrast with the present invention, the problem that Briechele addresses in Fig. 10 is introduced by sub-global addressing which may cause multiple ESLs to respond to a single message because each ESL shares a similar characteristic such as the same rail ID.

The Official Action suggests that it would have been obvious to transmit a "verification message" which includes the step of executing the CRC check of step 141 as taught by Briechele for the purpose of "performing redundant CRC retransmission in order to verify proper CRC code transmitted with the data message, since a second CRC transmission will ensure data integrity due to redundancy." Applicants respectfully disagree on multiple grounds. First, as described above, the only application of CRC discussed in Briechele is to determine whether the received message is a valid message. Briechele does not teach and does not suggest that "the verification message indicates that the contents of the ESL's registers match the expected contents as maintained by the host computer," as claimed in claim 1.

Second, there is nothing in Briechele which suggests performing a second CRC transmission. Although the present specification at page 8, lines 7-13 discloses a second CRC transmission where the CRC is based on the contents of the ESL registers, to utilize such a suggestion from the present specification is an improper hindsight test and must be avoided. If

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anything, Brieche's failure constitutes evidence of the failure of others indicative of nonobviousness rather than obviousness.

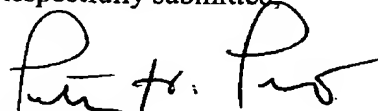
Third, performing a second CRC transmission as suggested by the Official Action in the manner suggested by Brieche would only re-verify that the message is a valid message which was already known in the first CRC transmission. Thus, no additional information would be obtained by the second transmission.

The relied upon reference fails to recognize the problem of content verification and fails to address this problem in the manner advantageously addressed by the present claims. The claims as presently presented are not taught, are not inherent, and are not obvious in light of the art relied upon.

Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,



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